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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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10/500,543

12/20/2004

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02/09/2009

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EXAMINER

LEE, RIP A

ART UNIT

PAPER NUMBER

1796

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|--|--|
| Office Action Summary | Application No. 10/500,543 | Applicant(s) SCHOTTEK ET AL. | |
| | Examiner RIP A. LEE | Art Unit 1796 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on November 10, 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3, 6 and 9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 3, 6 and 9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action follows a response filed on November 10, 2008. Claims 3 and 9 were amended to correct matters of form, and claims 4, 5, 10, and 11 were canceled. Claims 3, 6, and 9 remain.

Claim Rejections - 35 USC § 103

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 3, 6, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Resconi *et al.* (U.S. 6,191,294) for the same reasons set forth in the previous office action dated May 9, 2008.

A process for the racemoselective preparation of silicon-bridged dialkyl ansa-metallocenes of formula (I) which comprises contacting a starting ligand compound of formula (II) with a transition metal dialkyl compound of formula (III) wherein the transition metal dialkyl compound of formula (III) is produced above -30 °C by combining a compound M^1X_{x+2} with from 2 to 2.5 equivalents of a compound R^1M^3 in the presence of a ligand compound D.

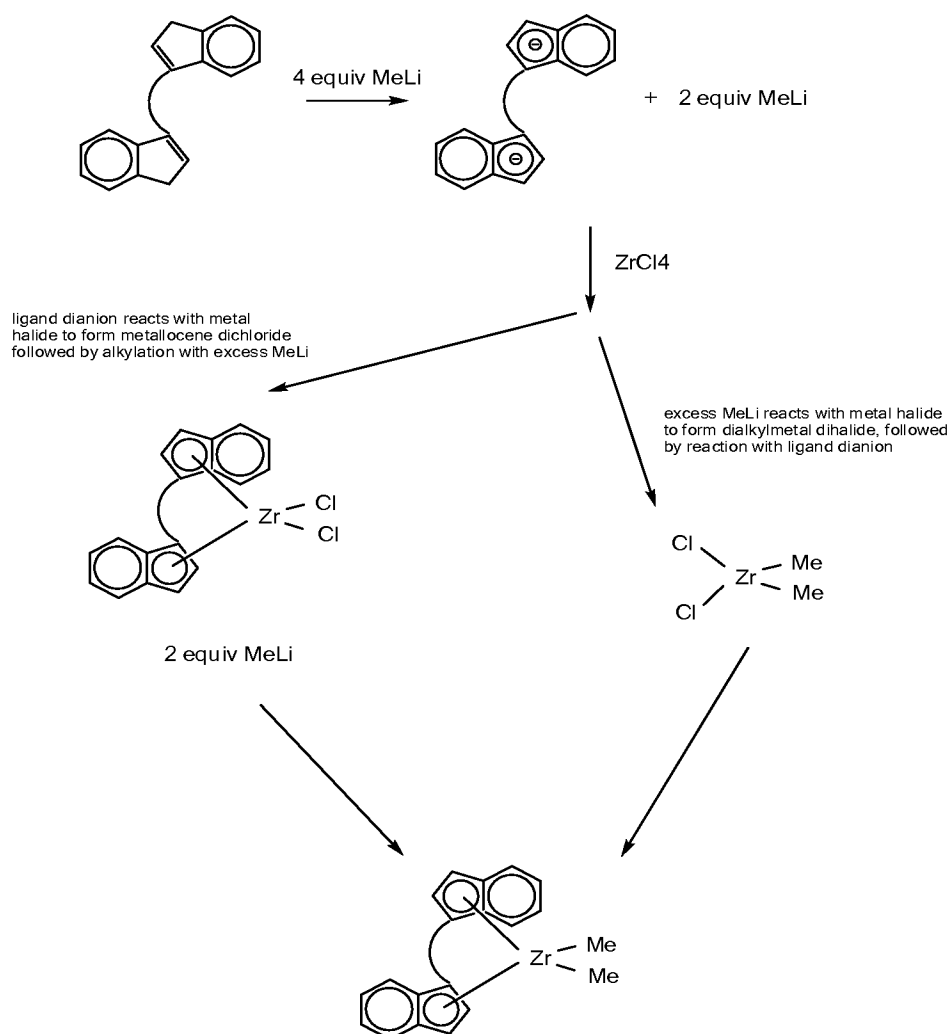
Resconi *et al.* (U.S. 6,191,294) teaches a general synthesis for a series of metallocene dialkyl complexes. The compound $Me_2Si(2-MeInd)_2MMe_2$ is described in col. 5, line 26, and it would be obvious to apply the general synthetic procedure to make this specific compound. Example 1 of the patent discloses treatment of neutral ligand with four equivalents of MeLi in Et_2O at -20 °C. The resulting solution is cooled to -80 °C and then added to $ZrCl_4$ /pentane slurry, also maintained at -80 °C. The reaction mixture is then allowed to warm to room temperature. In this reaction, Et_2O is considered the uncharged Lewis base D of formula (III) of the claim.

The reactions disclosed in the prior art are likely to proceed via two pathways, shown below; ring substituents omitted for clarity. It is clear that deprotonation of the ligand occurs in the first step. Subsequently, one reaction pathway (shown on the left) involves complexation to form metallocene dichloride, followed by alkylation with excess MeLi to form metallocene

Art Unit: 1796

dialkyl. The second reaction pathway involves reaction of excess MeLi with ZrCl_4 , with concomitant formation of Me_2ZrCl_2 (shown on the right). Reaction with ligand dianion results in the formation of the metallocene dialkyl.

The reaction pathway on the right is germane to the subject of the instant claims. In this case, formation of Me_2ZrCl_2 appears to take place above $-30\text{ }^\circ\text{C}$ (as the reaction warms to room temperature). Although the reaction mechanism is not disclosed in the reference, a reasonable basis exists to believe that the reaction occurs by the path shown on the right, and since the PTO can not conduct experiments, the burden of proof is shifted to Applicant to establish any unobviousness differences. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).



Art Unit: 1796

3. Claims 3, 6, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Resconi *et al.* (WO 02/83699) for the same reasons set forth in the previous office action dated May 9, 2008.

Resconi *et al.* (WO 02/83699) teaches a general synthesis for a series of metallocene dialkyl complexes. Example 3 of the patent discloses treatment of neutral ligand (indenyl) with four equivalents of MeLi in Et₂O at room temperature, resulting in the formation of Ind₂ZrMe₂. The dimethyl complex is then converted to its dichloride derivative in a subsequent step. The compound Me₂Si(2-MeInd)₂ZrCl₂ is described on page 8, line 15, and it would have been just as obvious to extend this synthesis for the preparation of Me₂Si(2-MeInd)₂ZrMe₂ in order to make Me₂Si(2-MeInd)₂ZrCl₂. As elucidated in the previous paragraph, the reaction of interest can proceed via the pathway shown on the right, and in this event, combination of ligand (II) with a transition metal dialkyl compound of formula (III) is carried out well above -30 °C. Although the reaction mechanism is not disclosed in the reference, a reasonable basis exists to believe that the reaction occurs by the path shown on the right, and since the PTO can not conduct experiments, the burden of proof is shifted to Applicant to establish any unobviousness differences. *In re Best*, 562 F.2d 1252, 1255, 195 USPQ 430, 433 (CCPA 1977). *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Response to Arguments

4. Applicant traverses the rejection of claims over Resconi *et al.* (U.S. 6,191,294) and Resconi *et al.* (WO 02/83699). Applicant submits that the prior art discloses a process of treatment of neutral ligand with four equivalents of MeLi rather than a process of combining a compound M^1X_{x+2} with from 2 to 2.5 equivalents of a compound R^1M^3 in the presence of a compound D. Applicant's arguments have been considered fully, but they are not persuasive.

Analysis of the process of Resconi *et al.* is instructive. Indeed, the prior art teaches treatment of neutral ligand with four equivalents of MeLi in Et₂O at -20 °C, followed by cooling the resulting solution to -80 °C. Subsequently, and the solution is added to a ZrCl₄/pentane slurry, also maintained at -80 °C. The reaction mixture is then allowed to warm to room temperature, resulting in formation of the metallocene dialkyl complex.

The reaction pathway on the right is germane to the subject of the instant claims. In this case, formation of Me₂ZrCl₂ appears to takes place above -30 °C (as the reaction warms to room temperature). Accordingly, the condition that "compound M^1X_{x+2} (in this case, ZrCl₄) with from 2 to 2.5 equivalents of a compound R^1M^3 (MeLi) in the presence of a compound D (Et₂O) is met. The transitional phrase "comprising" in a process claim does not exclude unrecited steps or elements, and it does not limit combination of compound M^1X_{x+2} with from 2 to 2.5 equivalents of R^1M^3 only. Moreover, according to the proposed reaction sequence, only two equivalents of MeLi would react with ZrCl₂ to form Me₂ZrCl₂; additional two equivalents are required for deprotonation of the ligand.

Although the reaction mechanism is not disclosed in the reference, a reasonable basis existed to believe that the reaction occurs by the path shown on the right, and since the PTO can not conduct experiments, the burden of proof was shifted to Applicant to establish any unobviouness differences. To date, Applicant has not met this burden of proof. Applicant has also not established why one of ordinary skill in the art would not have found it obvious to extend the general synthesis of *bisindenyl* complexes to synthesis of substituted analogue, Me₂Si(2-MeInd)₂MMe₂.

In light of these considerations, the rejections have been maintained.

Conclusion

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <<http://pair-direct.uspto.gov>>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

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February 3, 2009

/David Wu/

Application/Control Number: 10/500,543

Page 7

Art Unit: 1796

Supervisory Patent Examiner, Art Unit 1796